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ORIGINAL ARTICLES:

	PAGE
THE TREATMENT OF TUBERCULOSIS APART FROM CLIMATE. By Karl Von Ruck, M. D.....	1
NUTRITION IN TUBERCULOSIS. By Wm. F. Waugh, M.D.	6
IS TUBERCULOSIS A CONTAGIOUS DISEASE, AND SHOULD SEGREGATION BE PRACTICED. By Lawrence F. Flick, M. D.....	8
HEALTH RESORTS—CALIFORNIA. By Walter Davidson Bidwell, M. D.....	11
ANNOTATIONS.....	12
NEWS.....	13, 24
EDITORIAL:	
CHURCHILL'S THEORY.....	14
LETTERS TO THE EDITOR.....	15
NOTES AND ITEMS.....	iv, xii, xlii

THE MEDICAL DIGEST:

	PAGE
Treatment of Phthisis by the French Clinicians (<i>La Pratique Journalière des Hôpitaux de Paris</i>)—Creosote Enemata (<i>Revue Médicale</i>)—Tuberculin and its Modifications (<i>Internat. Med. Mag.</i>)—Shurly-Gibbes Method—New Form of Iodine Treatment (<i>Jour. Am. Med. As.</i>)—Hypodermic Injections of Salol in Pulmonary Phthisis (<i>Rif. Med.</i>)—Creosote in Tuberculosis of Children (<i>Rif. Med.</i>)—Salophen (<i>Therap. Monats.</i>)—Atropine in Hemoptysis (<i>Médecinskoje Obozrenie</i>)—Creosote in Phthisis (<i>Med. Record</i>)—Prize for Essay on Tuberculosis—Guaiaconol (<i>Internat. Med. Mag.</i>)—The Pre-tubercular Condition (<i>Tyndale</i>)—Repairing Damaged Throat and Lung Tissue (<i>Shade</i>)—Treatment of Phthisis in Japan (<i>Sci-i-Kwai</i>)—Treatment with the Serum of Dog's Blood (<i>Kinnicuth</i>).....	15-24

Original Articles.

THE TREATMENT OF TUBERCULOSIS APART FROM CLIMATE.

By KARL VON RUCK, M. D.,

ASHEVILLE, N. C.¹

THE treatment of pulmonary tuberculosis apart from climatic is one of the greatest interest not only to the physicians who are obliged to treat their patients at home and without the advantage of climate, but also to such as practice at climatic resorts, because, although of the greatest importance, climate alone, in its influence upon the disease in question, is not a specific, and the results from it are by no means so uniform and satisfactory that, having resorted to it, we can complacently await the recovery of the patient.

The object of this paper is to consider the remedies, if any, we have apart from climate, and the value they possess, by which we can either cure or at least materially aid the patient's improvement and ultimate recovery; and, if valuable at all, they are so both at home and at climatic resorts.

In laying my conclusions with such remedies before you, I may say that they are based upon observations of nearly fifteen hundred cases treated by me within the last ten years.

During this time of almost exclusive devotion to the treatment of tubercular

patients, I have made careful and extended trial of all the remedies which had the sanction of the profession, and, so far as the safety of the patient justified their employment, also of those, which have of late attracted attention,

I need not mention that the correct appreciation of the value of any remedy in its employment for chronic disease is difficult, and requires for anything amounting to a proof, application in a great number of cases, and, if possible, all under the same conditions. Unfortunately pulmonary tuberculosis in addition to its chronic course is a disease attended by periods of more or less temporary improvement, and again by periods of reverses without any medical interference whatever, making it still more difficult to assign a correct value to remedies employed.

For instance, a patient having a tubercular deposit in his lung has arrived at a period when softening and breaking down must necessarily occur and is impending, if he now consults a physician and receives at his hands any remedy, this patient will soon suffer from increasing cough, fever and in consequence from diminished appetite, loss of flesh and debility, in short he will grow worse for the time being under any treatment, and climate itself, will not be able to entirely avert the destructive process and its accompanying symptoms. When the patient has safely passed through this process of softening, with a cavity formed, the cough and expectoration diminish, the fever subsides, the appetite and nutritive processes again improve,

¹Read before the Buncomb Co. Medical Society at Asheville, N. C., Jan. 2, 1893.

and, if at this juncture he receive a remedy of no value whatever, he will probably continue to improve for a time.

These phases so commonly observed in pulmonary tuberculosis are frequently believed to stand in relation to proper or improper treatment, or to valuable or indifferent remedies, when, in fact, the treatment or remedies have had nothing to do with it whatever, and it is for this reason that so many remedies have found recommendation as aids or curatives for consumption, and were subsequently discarded when a more extended trial had ended their ephemeral reputation. I have endeavored not to lose sight of these facts, and in addition to my efforts to learn the truth, I have had the opportunity of more constant observation in my institution, and the ability, there to preclude or to recognize influences which affected the course and symptoms of the cases under my care.

In various contributions by myself upon the subject of pulmonary tuberculosis, I have heretofore emphasized as our most important of all means, the proper hygienic management of the patient, which includes environment, diet and such conduct of the patient as shall assure for Nature the best opportunity for increased nutritive processes, and prevent relapses by the avoidance of various indiscretions.

In a paper read at the Third Annual Meeting of the Tri-State Medical Association, Oct. 27th 1891, and published in the *Dietetic Gazette* of November and December, 1891, entitled "The Cure of Pulmonary Tuberculosis upon the Principles of Nutrition," I have shown, at length, that all the remedies which we possess, climate not excluded, and which have ultimately been shown to have any value at all, are valuable only, because of their direct or indirect influence upon the nutritive processes, and I have stated that every remedy must stand or fall as it is useful or useless to this end, and that their greater or less value must be estimated by this standard.

From my additional observations since, I have had no occasion to change my views in this respect, and I can perhaps show best my conclusions as to the value and uses of our present remedies by describing the use we make of them

in the special institution under my charge. All the remedies we there employ, as well as the general management of the cases, can in a large measure be employed and carried out in private practice at least to a degree that in the earlier stages of disease, improvement and cure should follow in a greater number of cases.

Patients upon their arrival at the Winyah Sanitarium are thoroughly instructed of the infectious nature of their expectoration, and much pains is taken to make them understand the importance of its proper disposition, appealing frequently to their selfish natures by showing them the possibility of self-infection should they be in any way careless or delinquent in following the rules given them for prevention.

Believing as I do, that physical and mental over-exertion are the most frequent causes of relapses and necessarily interfere with the nutritive processes by the production of heart-fatigue and its direct and indirect consequences, the patient is directed, "that, while exercise is desirable and beneficial, it must never be carried to a degree of sensible fatigue, neither must it be taken so rapidly that it will induce shortness of breath."

This gives each patient his own limits, and he, himself, becomes the best judge of the exercise beneficial and when it becomes injurious in his particular case.

The next point considered is the presence or absence of fever, to that end, frequent observations of temperature are made, especially for the first few days, and they are also made nights, should a patient complain of restlessness, frequent or increasing cough during the night hours, or of night sweats. If it is found that a patient's temperature at any time during the twenty-fours is elevated two or more degrees, he is ordered to observe absolute rest, beginning with an hour preceding the rise of temperature of the previous day, and continuing until it is reduced to below 100 F. The diet during the fever hours is light, consists chiefly of milk, and the more hearty meals are recommended to be taken when the temperature is normal or nearly so. Unless the fever is very high, this rest treatment is carried out by the patient lying upon a cot upon the piazza, otherwise he goes to

bed, the windows in his room being open to admit plenty of fresh air and sunlight.

These simple measures of rest and diet succeed in the majority of cases in bringing about a gradual amelioration and frequently an entire absence of fever, without which it is not often possible to make any important gain. In cases where these measures are insufficient, we resort to stimulants administered in full doses before the expected rise of temperature, and, these failing also, hydropathic measures are resorted to in addition, and an ice bag is placed over the heart during high fever. Drug anti-pyretics in any form are avoided.

Next in importance is considered the patient's diet, which in the absence of fever or other complications should be mixed, well cooked, nicely served and highly nutritious, avoiding all pastries and articles which in the particular case are found to disagree. The patients receive milk *ad libitum*, at any time and those who do not eat heartily at the principal meals, consume certainly from three to four glasses of milk or more per day, in the intervals.

The diet of patients having continuous fever is light, consisting of milk, nourishing soups, cooked cereals with cream, broths, oysters, fish, custards, fruit, etc., and is supplemented by rectal alimentation whenever he appears to lose in flesh.

Combined with rest, massage and hydropathic applications, it has been frequently possible to obtain an increase in weight or at least to prevent loss, when temperature maxima of 103 and over were present.

As quickly as the patient's digestive organs permit, solid food is substituted at one or more meals and with the cessation of fever, the patient reaches the general liberal diet.

In gastric and intestinal complications, the diet must of course be regulated in the first place, and the medicinal treatment for such remains the same as it would be, apart from the fact that the patient is a consumptive.

In ectasia and inveterate gastric catarrh, lavage and local medication through the tube is indispensable, in the former, and in cases with deficiency of hydro-chloric acid, local faradization by Einhorn's method is also made use of

with the greatest benefit. Creosote is used only for its influence in overcoming fermentative processes in the alimentary canal, when less unpleasant means fail to succeed, and for its stimulating effect upon the mucous surfaces.

I have become absolutely satisfied that creosote has no specific effect upon the tubercular processes and have demonstrated, that inoculation with tubercle bacilli of blood serum from a patient absolutely saturated with creosote by large and long continued dosage, show luxuriant growths of the germ, not differing from culture in serum from sources where creosote had not been given—also that the germs from such patient's sputum produce virulent cultures.

Patients, who can take it easily and assimilate it, especially those in whom increase in weight is desired, and is not otherwise readily obtained, are given cod-liver oil either in emulsion or clear, as they prefer.

For its general tonic effect, as a stimulant to the circulation and for the prevention of taking cold, by accustoming the skin to changes of temperature, I employ regularly for all patients the so-called "cold rub."

This is applied before the patient gets out of bed in the morning, and consists in the rapid application of cold water followed by brisk friction, a small surface of the body being so treated at a time while the rest remains covered with a woolen blanket.

The temperature of the water is first 100 F. and is steadily decreased until after three or four weeks a temperature of 60 or even less is reached.

In cases where the cold water treatment and other management are insufficient and there is still feeble heart action, or the heart continues to be easily excited by slight exertion, I make use of strychnia in full doses, and I prefer it the more, when from want of sufficient motility the digestive process is unusually slow. Small doses are of little use, and the remedy gives us the best results when pushed a little short of the degree where its physiological effects become distinctly manifest. It becomes then a good expectorant, has a favorable effect upon night sweats, prevents constipation and increases the appetite.

Cough mixtures are never used, and seldom is there any occasion to interfere on account of cough.

When accompanied by expectoration the cough is useful; otherwise, if the general management is correct, the patient seldom is annoyed by dry or unavailing cough; if the latter is still present, an examination of the pharynx and larynx usually shows conditions there, which account for it either by enlarged glands at the base of the tongue, catarrhal pharyngitis or laryngitis, or tubercular disease for which proper local treatment is then employed. In the few cases where cough needs to be interfered with moist inhalations give as a rule, relief, otherwise I prefer the use of codeine in small doses.

The local or circumscribed pleurisies which occur in the course of tuberculosis of the lung are treated by rest and counter-irritation, cough is then controlled by codeine.

Pleurisy with effusion is treated upon general medical and surgical principles, but early evacuation of serous fluid is avoided, having found that in most cases, it is reabsorbed without surgical interference before any damage to the lung can result.

Tubercular disease of the intestines occurs as a rule only as a late complication in cases otherwise far advanced, which we do not admit to our institution. In such, however, as have come under my care, I admit freely that I have seen little benefit from the remedies employed. When the stomach digestion is still good, a raw beef diet together with salicylate of bismuth and small doses of opium internally have been found beneficial. In a few cases the diarrhoea entirely subsided.

Urine analysis should be made in all cases, and especially in such where the disease has advanced to destructive changes in the lungs. It will be found that amyloid kidney is a much more frequent complication in advanced cases than is mentioned by text books, and these cases are ultimately hopeless.

Bloody expectoration, that is mucopus with an admixture of blood, is treated by rest, if the cough is troublesome codeia in small doses is given.

Expectoration of clear blood or de-

cided hemorrhage has occurred so rarely that I have little experience to offer from the usual well known treatment.

In all my cases which have been treated in the institution, hemorrhages occurred in less than one per cent., and, with one or two exceptions, were clearly referable to the patient's own fault. In private practice I have observed hemorrhages with the usual frequency, until I learned to appreciate the detrimental effects of over exertion, since which time I see much less of it. One other potent but less frequent factor favoring the occurrence of hemorrhage is a very rapid gain in the general condition of patients who make blood very rapidly.

I have observed several such cases where, after excavation, the general improvement was almost astonishing, the patient, particularly in one case, presenting a florid appearance. Hemorrhage from the cavity occurred without any other apparent cause than the condition of an over-filled vascular system favoring rupture of a vessel traversing the cavity.

In the treatment of hemorrhage, I have always endeavored to distinguish between the forms which occur with destructive processes and that form which is the result of over-exertion, only. The former is the more obstinate and yields best to applications of ice bags over the heart and over the seat of the destructive change. In addition, I of course, take such other measures as the particular circumstances in the case may indicate; rest, ice, light diet, ergot, morphia, strychnia and inhalations of astringents being considered most useful.

In referring to more specific methods of treatment, I have already stated that, in my experience, creosote has not justified me in considering it as having any direct influence upon the tubercular process.

Koch's Tuberculin and Tuberculocidin prepared by Prof. Klebs I have used extensively, having made more than six thousand injections of these remedies within the past two years. As to Koch's original tuberculin, I still believe, that by the careful method which I suggested in its administration, and which, to my knowledge, has not been carried out by any of the experimentors in this country with the precautions I have learned to be essential, the remedy is a valuable one for

properly selected cases. After its first few weeks use, I have not observed the least unfavorable influence attributable even remotely to the remedy nor the slightest discomfort to the patient beyond the puncture with the hypodermic needle. On the other hand my patients all improved, quite a number arrived at conditions amounting to a cure, or at least, permanent arrestment of the local process with subsidence of all symptoms, and in many more, improvement of a less degree is still maintained. Owing, however, to the adverse judgment of many of the profession, and, on the whole, to a well marked prejudice on the part of patients, I have been obliged to relinquish its more general use, if I hope for further patronage to my institution, and I have for more than a year past, not given it unless by the request of the patient, and the consent of the physician who recommended the patient to me, and, of course, only then, when I found the case otherwise suitable to the treatment.

It has recently been urged that my results are not attributable to the tuberculin, but to the strict management and other care which the patients had in the institution, located as it is, in a favorable climate.

Be that as it may, I have the satisfaction, that I have not been obliged to witness the disasters related by other experimentors, while I still hold to my impression that the remedy has been an important aid.

One naturally believes his own senses, these have shown me visible tubercular infiltrations and ulcerations in the mouth, pharynx and larynx to improve rapidly, and, in many cases, I have seen tubercular ulcers to heal and cicatrize in which no progress had been made under the usual local treatment, and while I am unable to say what the result would have been had no tuberculin been given, I cannot divest myself of the impression, that the improvement of many pulmonary, and laryngeal cases has been unusually rapid and satisfactory.

With Klebs' tuberculocidin I have never been able to produce either local or general effects. I have used it upon twenty-two patients. Daily doses of 5000 milligrams had no more influence upon the patient's general condition,

than so much water. It was remarkable, however, that in a number of the cases, the cough became modified for the better, the expectoration changed in its character and finally diminished in quantity, the tubercle bacilli diminished in numbers, showed degeneration forms, and in several cases entirely disappeared for the time being.

Subsequently they became again manifest, and disappeared again upon a second course of the remedy. The same return was witnessed a third time, except in one case, who has had no expectoration since his second course and is practically recovered.

Although the behavior and disappearance of the tubercle bacilli was remarkable, and seemed to stand in relation to the treatment with tuberculocidin, I discontinued its use, nevertheless, first, on account of the great cost of the large doses required, and also because the general improvement of the patient was not strikingly greater, in fact, in most cases not as satisfactory as I have witnessed under Koch's original remedy.

The latter, according to my observations, when given as I have recommended, produces a gentle, stimulating effect upon the tubercular lesions. Under such use more blood reaches the part, the local nutrition is thereby augmented and the formation of connective tissue in and surrounding the tubercular deposit is favored. This stimulating effect was not apparent under the use of tuberculocidin, and visible tubercular lesions were not influenced in their course and showed no local reaction to the remedy. Large and injudicious doses of Koch's tuberculin lead to well marked congestion and are frequently followed by inflammatory changes, softening and destructive processes, and thus become a source of evil instead of benefit.

I still hope that by some improvement in its manufacture, or modification, such as Hunter's or Kleb's, the remedy will be made so safe that its administration will require less care and circumspection than I have found necessary, while it may remain equally effective.

In my experience, no drug remedies have been of direct value in the treatment of pulmonary tuberculosis. Such as I have been obliged to use more

recently and am still using, were given not because the patient suffered from tuberculosis but because, in the course of the disease certain symptoms could, for the time being, be modified and controlled favorable, the faulty nutrition could thereby be improved or because there were other conditions apart from the tubercular disease which required medicinal treatment. We thus resort to the Pneumatic Cabinet if, in the absence of contra-indications, we desire a better ventilation in the lung, and to overcome passive congestion. Under its proper use, the pulmonary circulation becomes better, the vital capacity is increased and the patient's general nutrition is benefited. We also resort to the inhalation of oxygen and more recently of ozone; and exhibit ferruginous preparations under certain conditions of anemia which do not yield to judicious diet and out-of-door life.

The latter carried out painstakingly, and best in a favorable climate, combined with strict and correct management which takes cognizance of the minutest details in the patient's life by which everything is turned to the patient's advantage and all harmful influences are guarded against, these with a carefully regulated diet the judicious use of hydropathic applications and with sufficient time given, are the great essentials to improvement and cure.

THE WINYAH SANITARIUM, ASHEVILLE, N. C.

NUTRITION IN TUBERCULOSIS.

By WILLIAM F. WAUGH, M. D.

WHATEVER may be the final results of the experimentation now going on, no distinctly germicidal remedy has as yet succeeded so positively as to command the general support of the medical profession as a body. Thus far, the only practical result of the discovery of the tubercle bacillus, as regards therapy, is to reaffirm the conclusions already reached by the clinical experiences of ages, that the strongest defense against tuberculosis lies in improving the nutrition. We now say, we seek to render the body immune by increasing its power of resisting the attack of the bacillus; just as our fathers

spoke of aiding the *vis medicatrix naturae*. Then, as now, it was recognized that there is a certain predisposition to tuberculosis, that while all mankind is exposed to the danger of contracting this disease, certain individuals are much more apt to become affected than others. That elusive principle, the vital force, has been quoted learnedly rather than tangibly, but in this materialistic age we cannot go farther than the nutrition. We may say that the specific liability to tuberculosis lies in innutrition; and that by improving the nutrition we lessen this liability; while in those who have not by inheritance or by constitution any predisposition to tuberculosis, such predisposition may, and will, be acquired, if conditions arise that throw the individual into a condition of innutrition. Moreover, we can go farther, and say, that should iodoform, aristol, guaiacol, or any other substance, finally win a place as an agent of real efficacy as a *tuberculocide*, the principal role as prophylactic and adjuvant will still remain to the nutrition improvers. At present I wish to speak of the digestive system and its needs in tuberculosis.

It is a matter of common observation that even in the pre-tubercular state we have weakness of all the digestive organs, and a total inability to digest certain foods or even entire classes of foods. The person with phthisical tendencies has little appetite, is delicate and particular in regard to food, is unable to digest coarse foods, or any fat, except butter, and eats but little of that. The substitutes for food, tea, coffee, tobacco and alcohol, are favored by him. Milk constipates, eggs make him bilious, fat meat he cannot swallow, and of the few articles that agree with him, he soon tires, from their frequent repetition. Nevertheless, he is not enterprising, and looks with dislike on the prospect of tasting any new or unaccustomed dish. Here is where I make my first point: This state of affairs is largely due to habit; and is to be overcome, as any other bad habit would be, by persistent effort. My first rule is that the patient shall eat a morsel of every article that appears upon his table; that he shall especially eat of the foods he dislikes, and that disagree with him. And yet every doctor and every book re-

peats the stereotyped rule "avoid foods that disagree." Why? Will the boy ever learn to swim who never goes into the water? Will the stomach ever learn to digest unless it tries? Why do oysters, shaddocks, garlic, avogado pears, tobacco, beer, become palatable? No one likes these things at first, but as the palate becomes *accustomed* to them, they are relished more and more. The dislike of a food is due to two causes:—the palate has not become accustomed to it, or the digestive organs are unable to manage it. We dislike things we cannot digest, and unconsciously select such articles as are most readily digested by us. It has been said, I think it was by Gross, that no one recovers robust health on a limited diet. I will go farther and say that a limited diet is responsible for a vast proportion of the ill-health prevalent. The needs of the human body are wonderfully complex. Take the articles that make up an ordinary dinner, and inquire where they were produced, and you may be surprised to find how many parts of the globe have been ransacked to bring together the materials for a single meal. This is not accidental. It means that the modern man requires the most complex variety of food principles to sustain, in perfect order, his wonderful mechanism.

Any child may, in a few months' time, be taught to digest every variety of food that is obtainable, by the simple method of instructing him to eat a little morsel of every article presented. It is not well to give more than a morsel, as the ability to digest must be developed, and the first step is the cultivation of the taste. As the palate becomes accustomed to the new food, the ability to digest it increases. A great benefit accruing from this instruction is that the child, or invalid, is thereby debarred from making his meal off one article—a custom well calculated for the reduction of fat or plethora, but not conducive to the health or the morals of children. The greed displayed by a child who would devour the whole contents of the dish he liked best, is not salutary to mind or body.

But invalids cannot be expected to begin off-hand, eating all sorts of food, things they cannot digest and things that disagree with them, without any

preparation or assistance. In all cases, the quantity of food to be taken at each meal must be prescribed, and the new foods must be accompanied by artificial digestants, until the patient has learned to digest them himself. The albuminoids are nearly always the foods most easily digested; the starches and fats offer the greatest resistance. Hence the digestants most generally useful are pancreatic extract, and diastase. No preparations of these agents with which I am acquainted excel, if any equal, in efficiency and palatability those of the Maltine Company. The maltine with pancreatin should be given in full doses, at the beginning of each meal, in all cases of tubercular predisposition, in which the training system herein advocated is put in effect. The dose may be given in milk, water, beer or porter, but is best given in gruel or by spreading on a thin slice of buttered bread, and this covered by another. This ensures the taking of starch and fat at the same time as the agent that digests these foods. Otherwise, half an hour may intervene between the food and its digestant; when it is somewhat doubtful if any good is obtained from the latter. In all stages of phthisis, maltine is indicated, and the various compounds may be varied to suit the case. If the albuminoids are not digested, the maltine with peptones is to be preferred. Of this preparation, Prof. Graeme M. Hammond writes as follows:¹

"The digestive organs of many people who suffer from neurasthenia refuse to perform their functions properly. As in epilepsy, the digestive juices are not secreted in anything like their proper proportions. This, of course, results in indigestion for all classes of foods, usually more for some than for others. In such cases I have found maltine with peptones very serviceable. The maltine promotes the digestibility of the starchy foods, while the peptones permit the daily quantity of nitrogenous food to be diminished without depriving the body of its nutrition.

"From my experience with maltine with peptones, I have come to regard it as a most valuable remedy in the treat-

¹N. Y. Med. Journal.

ment of disorders of digestion, and for imperfect nutrition."

Dr. Bloch, of the Montefiore Home for Chronic Invalids, says: "In cases of advanced phthisis, maltine with peptones was well borne by the stomach, vomiting ceased soon, and the patients became much stronger, nutrition being restored. In one case of phthisis where the œdema had extended over the whole body and face, together with marked ascites, the swelling disappeared gradually after maltine with peptones was given, while the stimulants alone had been without avail, the œdematous stomach not being able to absorb a sufficient quantity."

Even in the advanced stages of phthisis when it is exceedingly difficult to nourish the patient, and forced feeding is resorted to, the maltine with peptones will be taken with some relish and no nausea. For gavage, pre-digested milk, maltine with peptones, Bovinine, Mosquera's powdered beef, Carnrick's foods, raw eggs, with a liberal allowance of pepsin, may be employed in succession. The feeding should not be repeated more than three times daily, and may be supplemented by one daily injection of the same foods into the rectum.

The stomach will take the acid meats after all other food has become distasteful. Pickled tripe, soused pigs' feet, pickled lambs' tongues, raw oysters with vinegar, are relished up to the latest periods. To all these foods, pepsin should be added in full doses.

The administration of the digestants in the pre-tubercular and early tubercular conditions is not a simple palliative. Under their use the stomach begins to digest for itself. This is partly due to the fact that as the blood is enriched by the absorption of the products of digestion, the peptic glands have better material upon which to work, and therefore produce a better supply of pepsin. But very often when the stomach is unable to start the process of digestion, it will keep that process going if it is once begun. Hence, what is needed, is *the start*; and if we give enough pepsin to digest an ounce of food, we will find that several ounces will be digested, even in a stomach that without the pepsin could digest none.

IS TUBERCULOSIS A CONTAGIOUS DISEASE, AND SHOULD SEGREGATION BE PRACTICED?

By LAWRENCE F. FLICK, M. D.

TUBERCULOSIS is a contagious disease. Has the theory implied in this proposition sufficient evidence in its support to justify the medical profession in accepting it as a doctrine? To my mind it has, and if it has not, then there is no disease which ought to be accepted as contagious, for none has been demonstrated to be so. We have, in support of the contagious theory of tuberculosis, experimental and clinical evidence, either of which is in itself conclusive; and when the two are considered together they ought to convince the most skeptical mind.

The experimental evidence begins with the work of Körtum, in 1789, and ends with the complete demonstration of Koch. There is nothing wanting in this evidence. It is as complete and as convincing as anything human can be. If reason rejects it, it must also reject the simplest problem in mathematics. Those who have not studied this evidence have no right to speak on the subject, and those who have studied it and see a flaw in it, owe it as a duty to science and humanity to pick the flaw and hold it up before the civilized world. For such a person there is great renown in store.

The clinical evidence in support of the theory, while from the nature of things, less precise, is as pregnant with truth as the experimental. The chain of clinical facts which point to the conclusion that tuberculosis is contagious is so complete and strong as to leave no room for doubt. The entire chain of facts must, however, be contemplated as a whole and not in links.

In the first place, history offers strong evidence in support of the contagious theory. In those parts of the world which have been opened up to civilization recently enough to bring them clearly within the compass of historical vision—we are able to trace the introduction and progress of the disease. America was free from it prior to the entrance of the white man.¹ That portion of the

¹Treatise upon the Cause and Cure of Pulmonary Consumption. Rush. Vol. II, pp. 37.

country which was settled by the English, with whom the disease was very prevalent and who took no precaution against spreading it, became rapidly infected and soon became as much afflicted as England itself;¹ while that portion which was settled by Spaniards, who believed the disease to be contagious and practiced preventive measures, remained free from it until visited by other people who did not hold such beliefs and practice such measures.² The Papago Indians, who have kept aloof from all other than Spanish influences until recently, have, until recently, kept entirely free from the disease.³

History further shows that where preventive measures have been introduced the disease has diminished. Prior to 1782, tuberculosis was so prevalent in southern Italy, or what then constituted the Kingdom of Naples, that it became a source of alarm at home and a subject of comment abroad. The Neapolitans were driven to the conclusion that the disease is contagious by its great prevalency and malignancy. They accepted the conclusion and inaugurated a crusade against the disease by passing stringent laws for the purpose of isolating consumptives and disinfecting quarters occupied by them. These laws remained in operation long enough to stamp practices upon the people which remained with them as national customs. The result of the practices begotten by those laws has been the almost complete extermination of the disease in that part of Italy. From a mortality rate of at least ten per 1000 living people, there has been a reduction to a little above one per 1000 living people.⁴ England, prior to 1839, had a mortality rate from tuberculosis of over three per 1000 living people. About that time, prompted by humane motives alone, the

English began to institute consumption hospitals. These hospitals became popular and rapidly grew in number and capacity. In direct ratio with their isolating capacity tuberculosis decreased in England, and now, after forty-three years of persistent isolation, the disease has decreased fifty per cent.⁵ At the same rate of decrease tuberculosis will become extinct in England in forty years more.

Tuberculosis observes all clinical laws which acceptedly contagious disease observes.

1st. It is never contracted except upon exposure to another case. No one has yet shown an authentic case of tuberculosis which was contracted without such exposure, and has demonstrated that it was so contracted. The truth of this proposition is further borne testimony to by the frequent occurrence of the severest forms of inflammation of the lungs without termination in tuberculosis.

2nd. It occurs most frequently where exposure is the greatest and most prolonged. The vast majority of all cases of tuberculosis are contracted either by having intimate social relations with persons suffering from the disease or by living in infected houses. The very frequent occurrence of the disease in those who have intimate social relations with persons suffering from it has given rise to the erroneous and very misleading theory of heredity. The great part which infected houses play in the spread of the disease has been demonstrated in my paper on the contagiousness of phthisis, in which I tabulated all deaths from the disease in the Fifth Ward of the city of Philadelphia, during a period of twenty-five years, and more recently in the papers of Dr. Chapin, of Springfield, Mass., and Dr. De Forrest, of New Haven, Conn., in which they tabulated the deaths from the disease in each of those towns for long periods. Much interesting evidence in support of both of these methods of contracting the disease is furnished by Dr. Cornet's elaborate investigations.

3rd. Tuberculosis like other contagious disease is subject to the laws of

¹Contagiousness of Phthisis. Flick. Transactions Medical Society of the State of Pennsylvania, 1888.

²Supra Cit.

³Does Pulmonary Consumption Tend to Exterminate the Indians? By Thos. G. Mays, M. D.

⁴The Prevention of Tuberculosis. A Century's Experience in Italy. Flick. Transactions of the American Public Health Association. Vol. XVI.

⁵Special Hospitals for Treatment of Tuberculosis. Flick. TIMES AND REGISTER, Philadelphia, March, 1890, or, Transactions of College of Physicians, Philadelphia, 1892.

acclimatization, although in but a limited degree. Persons who have been exposed to the disease for a long time before taking it, take it in a milder form than those who contract it upon first exposure. This I have frequently seen in families in which nearly the entire family took the disease one after another. It is also illustrated in the history of the disease in countries or in large cities.¹

The objections which have been raised against the theory of contagion have all been ably answered at one time or another. It may be well, however, to notice a few of them here.

It is frequently said that if tuberculosis were a contagious disease every person ought to die of it, since every person is exposed, and because every person does not die of it, it cannot be contagious. This argument is of course based upon misconception. In the first place the laws of resistance and acclimatization are capable of preventing the extermination of the human family by any disease. In the next place the nature of tuberculosis and the laws governing its contagion tend to restrict it. Tuberculosis can only be conveyed through pus given off from a tubercular ulcer, be that in the lungs or in any other part of the body. The pus has to find its way into the system of the new victim before he can contract the disease. Now the natural obstructions which nature places in the way of the pus getting into the system of a healthy person are so many and great that it ordinarily requires prolonged exposure to contract the disease. The popular notion that the air of a city is swarming with tubercle bacilli, and that every where one goes he must inhale them is erroneous. Tubercle bacilli cannot live in air unprotected by a foreign body, such as pus, decomposed vegetable or animal matter or some such substance; they are, therefore, necessarily confined to certain environments. The inhalation of the breath of a consumptive is entirely innocuous, and unless one is so situated in life as to be compelled to inhale dried tubercular pus or to contaminate his food with tubercular pus he is in no danger of contracting the disease.

The freedom from tuberculosis of those

officially connected with consumptive hospitals was formerly quoted as an argument against the contagiousness of the disease, but since Dr. Williams, of the Brompton Hospital, and Dr. Cornet, of Germany, have shown that no such immunity exists the argument falls to the ground. Dr. Williams, in a paper which appears in the *British Medical Journal* of September, 1882, records twenty-one positive cases of phthisis and five doubtful ones which had up to that time occurred among persons who had been connected in one sphere or another with the Hospital. Dr. Cornet, in a very able paper, has shown that the mortality rate among nurses from tuberculosis is nearly three times as high as it is among people at large.

As to the question of segregation, in my opinion, it is unnecessary in the majority of cases. Compulsory segregation would, I think, be unjustifiable under any circumstances. The contagion of tuberculosis is confined to tubercular pus and this pus can easily be destroyed before it has the opportunity of infecting anyone else. With people who are sufficiently intelligent and who have the means, all necessary preventive measures can therefore be practiced at home. For the ignorant and for the very poor hospital accommodations ought to be provided. Such hospitals, if properly conducted, would offer sufficient chance of recovery to make it an inducement to go to them, and the poor would enter them voluntarily.

Some provision ought, however, to be made for the support of persons suffering from tuberculosis who are compelled by necessity to earn their own living, or that of persons depending upon them. No one suffering from tuberculosis should be permitted to engage in any occupation in which he handles either the food or clothing of others, or in which he may be thrown in very close relationship with the healthy. Persons who have earned their living at such occupations during health ought to be pensioned by the Government while suffering from the disease and be compelled to abstain from their occupation. Inasmuch as they make a sacrifice for the public good they ought to be supported by the public.

¹Contagiousness of Phthisis, Flick, Trans. of Med. Society of the State of Penna. 1888.

HEALTH RESORTS

BY WALTER DAVIDSON BIDWELL, M. D.
CALIFORNIA.

THE man who would attempt to write an article upon the climate of California, other than as W. A. Edwards has, concerning Southern California in the *Climatologist*, the article being quoted in the special number on "Resorts," would lay out for himself a task requiring more time than the little exploits of Hercules. Having lived in Massachusetts, Connecticut, Kansas and the District of Columbia, and visited for lengthy periods in South Carolina, Michigan and Colorado, New and Old Mexico, and being finally located in California, I have sampled a variety of climates, and though I am not a professional student of climatology, can at least claim a place among the amateurs. As an amateur, therefore, I believe there is no perfect climate for consumptives as a class nor even for an individual case. Every place in the world has material drawbacks and most places in the United States have two or three, perhaps more, features that are objectionable. Now, if every one, layman or physician, who feels called upon to, or will consent to write up the climatic conditions of any locality, will first jot down on scribbling paper the *defects* which he knows are present during one or more months in each year and which are inimical to the recovery of consumptive patients, and then write his laudatory article, being as conscientious as his temperament permits and incorporating in their proper places the defects alluded to, we will soon have a collection of material from which can be compiled a book on "Resorts" worth its weight in gold. There is nothing gained and much harm done by wholesale and unstinted praise of the climate of various localities, when not corrected by this statement of all the facts which justice demands.

It is not many months since a gentleman made a tour through California and the Southwest, investigating various places as resorts for consumptives, more particularly for winter, and in his report every place visited appeared more or less desirable, but all had so much favorable comment that a patient from the East

would have felt justified in going to any. If an arbitrary division into classes is made of cases of this disease in the incipient and advanced stages; those able to walk and those able to ride; those with slight and those with excessive expectoration and cough, and the relation pointed out between these classes and the climate of various localities, such reports will be of practical use to many a poor sufferer who thinks life is not worth living.

To return to California, I must confess that I have not been here long enough to report concerning even a single locality. I say *locality* advisedly, for there is no climate of the State, or even of a large portion of the State. In other portions of the United States this is different, for instance, the district for miles about Aiken has very similar climatic conditions to those which prevail in the town, whereas California has a different climate for each limited locality. For example, there is a northern and a southern citrus belt; indeed, though it is not so much talked of, the northern belt has produced the finer oranges, and this of course implies a certain well known mildness which does not exist in the interval between the two regions. San Rafael is less than twenty miles from San Francisco, and yet the temperature is several degrees higher, the rainfall several inches less, high winds practically unknown and fogs rare, whereas, during the Summer season it is the exception in San Francisco to be without fog for twenty-four hours, sometimes the sun is not seen for a week at a time, and the high winds come as regularly as the afternoon. Many cases of consumption develop in San Francisco, whereas, aside from dust and lack of occupation, San Rafael is a delightful resort for patients with the disease. Oakland, seven miles from San Francisco, has a milder Summer climate than the latter, Summer being the trying season in this State, while in Winter it is several degrees colder. The majority of consumptives are not able financially to live in one place in Winter and another in Summer, so in speaking of the advantages of a place, that one is to be considered infinitely preferable where the climatic conditions are not specially inimical to the patient's well-being at any season of the year, and where he or she can, by

his or her customary employment contribute to the support of self and any dependents.

Indeed there should be many special numbers on this one topic, and I hope to see more articles where every detail, not merely of atmospheric condition, but of equally important mental, moral, and financial surrounding and possibility, will be given, and the unfortunate patient, guided by his physician, be able to select that place where his physical being will be most benefited, because other factors than climate are not neglected.

When patients are sent from the East to California, grave errors are often made through a lack of knowledge of the exact climatic conditions of the different seasons. Winter is, generally speaking, a delightful season in the central and southern portions of the State. But the relative desirability of different localities, even in the same season, is hinted at in the weather report for the year of '91, which shows one place with three hundred and three cloudless days, and only eleven rainy days, the total annual precipitation being but 2.67 inches, while another, in the northern portion of the State, had only eighty-four cloudless days, one hundred and fifty-three rainy days, and the total precipitation was 45.80 inches.

Between these two extremes can be found any variety of climate desired. Another feature to be considered is that some cases are benefited by vicinity to the coast, where the soil is so dry and sandy that the atmosphere more closely simulates that out at sea than on the Atlantic coast. Some cases do well in mild latitudes like that of Los Angeles, while others are benefited by the less enervating climates farther North, where, also, there is less danger from the assembled consumptives, who are already located at Los Angeles.

Having thus intimated a few of the difficulties in the way of an adequate description of California climate, I hope, at no distant day, to present some collections of facts concerning individual places that may assist physicians in the East in locating those of their patients who desire to come to this State which undoubtedly contains many of the best

places in the world for permanent or temporary residence for invalids.

THE MACDONOUGH, OAKLAND, CAL.

Annotations.

Dr. E. F. Brush has paid special attention to the subject of tuberculosis as it appears in cattle, and the danger of milk from tuberculous cows. He states that this disease is much more common in cattle than is generally believed. As the temperature is not sensibly raised, the cow lives a long time, in apparently good health. The milk is not necessarily or at all times contaminated with tubercle bacilli but there is not at any time a certainty that it is not so contaminated. Consequently the child fed on such milk is in about the same danger as an infant that suckles from a syphilitic wet-nurse:—infection may or may not occur. The risk, such as it is, should be clearly understood, and those who choose to take their chances may do so knowingly. It is to be hoped that these investigations may lead to a reform in the care of milch cattle; whose accommodations are often of the most unsanitary description. As in the human subject, cleanliness, good ventilation, good food and good hygiene generally, are the best preventives of bovine tuberculosis. In the meantime those who buy their milk should see that it is well boiled.

In the June *Climatologist*, a journal whose early demise is to be regretted, Dr. Thomas Darlington discusses the effects of Arizona's peculiar climate on the bodily functions. The changes in the temperature are great and sudden. The loss of fluid from the body is very great; the skin and mucosa becoming very dry, so that in sleep the membranes become fissured; their mucus becomes inspissated, plugging the follicles; and follicular pharyngitis, tonsillitis and chronic rhinitis are very prevalent. Aphonia results from the dryness of the vocal chords. Otitis and deafness are common. Elimination by the liver is decreased, the urine is

scanty and generally heavy (s. g. 1028); irritating the urinary tract. Constipation results also; and with the water ptomaines are reabsorbed from the bowels. The loss of weight is constant; the average being thirteen pounds. This loss occurs in the first three months of residence.

News.

Messrs. W. H. Schieffelin & Co. prepare pills of guaiacol carbonate, containing three grains each. This preparation is free from odor and taste, unirritating, and uniform in composition, yet fully as effectual as guaiacol itself.

BOUILLLOT read before the French Academy of Medicine a paper, of which the following is an abstract:

The remarkable studies of MM. Gautier and Mourgues on the alkaloids of cod-liver oil, show us definitely the nature of the principles to which are due to a very great extent, its medicinal properties.

The physiological experiments made by these authorities on animals prove that the alkaloids referred to act:

1st. As stimulants of nutrition and of the circulation.

2nd. As diuretics.

In the presence of such remarkable results, explaining the therapeutic action of the oil, I have thought it possible to utilize in medicine the alkaloids themselves; besides it appeared to me interesting to inquire if the effects observed by MM. Gautier and Mourgues, in their experimentation on animals and especially its action as a stimulant to the appetite and diuresis, were noticeable when exhibited in a human being.

Guided by this idea, I prepared some of these same alkaloids, but in the present case I have not attempted to isolate them, and I have administered therefore the whole of the active principles of cod-liver oil as a medicinal unit.*

*M. Chapoteaut, in 1885, was the first to demonstrate that apart from the oil considered as an assimilable fat, there existed, in variable proportions, a number of alkaloids, etc., and these he removed from cod-liver oil in the form of Morrhual, representing all its active principles.

The dose administered by the mouth to normal subjects in twenty-four hours, varied from fifteen to twenty-five centigrammes.

The analysis of the urine made before and after the administration of these alkaloids showed that:

1st. The volume of urine voided during the twenty-four hours, as well as the amount of urea was considerably increased.

2nd. That it acted as a powerful stimulant to the intra organic oxidization, a fact already formulated in the conclusions of the original work.

From a clinical point of view the following are some of the results obtained on treating a number of patients with the active principles of cod-liver oil:

1st. Five young women with vague pains, loss of appetite, progressive decrease of strength, neurasthenia: The effects in the first place were increase of appetite, return of strength, with loss of the painful symptoms referred to. Three of them who had not menstruated for a considerable period were relieved of the suppression in a short time after beginning the treatment.

2nd. In the case of two children who were suffering from malnutrition, the appetite promptly returned in a few days.

3rd. Three patients who were afflicted with severe eczematous eruptions at each menstrual period, were cured of this trouble.

4th. In two cases of bronchial catarrh in old patients, the alkaloids produced the well-known effect of cod-liver oil, and were administered with advantage and perfectly tolerated.

These observations show that the active principles of cod-liver oil are of undoubted value as therapeutic aids where the oil is indicated.

An abstract of Klebs' report on tuberculocidin has been prepared, but has been crowded out of the present number. It, as well as other material on the subject of tuberculosis, will appear in our next number. In fact, it is to be expected that each of our special numbers will be followed by a supplementary issue the following week, mainly devoted to the same subject.

The Times and Register.

A Weekly Journal for Medicine and Surgery.

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CHURCHILL'S THEORY.

WHEN Churchill wrote, the bacillus had not yet been recognized; and since his time nearly half a century of investigation, myriads of new facts, and a revolution in pathological principles, have altered the foundations on which we to-day upbuild the edifice of our art and science. Yet, when we peruse the following epitome of his theory, and substitute the new nomenclature (for we are continually clothing old ideas in new terms,) how little is there to change! Add the bacillus as an exciting cause, and we have still to-day to account for the individual diversity of liability by an unknown physiological condition, concerning which Churchill's theory offers as good an explanation as any other as yet promulgated. Suppose the phagocytic theory be accepted; we have still the indomitable WHY, rising to confront us. Why do the phagocytes fail in one case and succeed in another?

Churchill's argument has been summarized as follows:

"Tuberculosis is produced by a condition in which the *oxidizable* phosphorus (a natural constituent of the normal system) is more or less deficient. This causes the tubercular diathesis, which precedes, accompanies, and is necessary to the production and progress of the local lesion. Inasmuch as *oxidizable* phosphorus contributes to the tissue-forming elements, circulating in the blood, the faculty of absorbing oxygen, and when absent or lacking in quantity this affinity for oxygen is lost or impaired, the indications seem plain for the administration of this lost or decreased element, in an oxidizable condition, whereby it would be reasonably supposed that the power to absorb oxygen would be restored to the tissue-forming bodies, enabling them to be properly oxidized while passing through the lungs. This should, therefore and consequently, change the diathesis; and by restoring the natural condition, stop the progress of the local lesion in the lung. When these tissue-forming elements reach the lungs in a patient suffering from this disease, they are not properly oxidized, as in a condition of health, not because of a deficiency of oxygen, but because they have lost the power of appropriating it, owing to the lack of oxidizable phosphorus, which by its powerful affinity for oxygen contributes to these bodies, by its presence, the power to seize upon and utilize it. The direct effect of this condition is the precipitation in the lung of a partly oxidized and consequently abnormal matter, which, if properly oxidized, would have continued on in the circulation and have been absorbed as healthy tissue. This precipitated in the lung is tubercle."

In accordance with this theory, Churchill introduced the hypophosphites into medical practice, as specific remedies in

tuberculosis. But according to his idea, the acid remaining the same, the bases with which it is combined are suited to very different conditions. Hence, he advised these salts to be given chemically pure, one salt at a time, the effect carefully watched and kept within the useful limit, the treatment continued as long as indicated, complications to receive their appropriate treatment, and the dose of any salt to be kept under seven grains day.

The physiogenic effects to be expected are: Increase of nervous energy, appetite, digestive action, and hematosis, with signs of venous plethora in due time. The increased nutrition is sometimes remarkably manifest in the hair and teeth.

The pathogenic effects are: Disturbed respiration, chest pains, cough, increase of local pulmonary signs, from hyperæmia. If the remedy be still given, hemorrhage takes place. Two signs especially indicate the pathogenic condition: Fullness of the face, and epistaxis. The cheeks are full and the malar region and lower eyelid puffy. The flush is general on the face, not circumscribed like that of hectic.

As to the indications for the various hypophosphites, Churchill considers the iron salt inadmissible in phthisis. Potassium is a powerful resolvent of consolidated lung tissue, causing too rapid softening of tubercular nodules. It also causes prostration, loss of appetite, indigestion, etc. Manganese resembles iron, but is less active. The hypophosphite of lime checks expectoration, and if this be done too rapidly, the cough increases. The soda salt increases expectoration, and is to be given when the sputa are tenacious and scanty. The hypophosphite of quinine is of value for young children, and in incipient phthisical diarrhoea. It is also recommended when the other salts produce pathogenic effects.

This brief outline indicates what are Churchill's views, and his method of

using the hypophosphites. A fair trial of his method, then, consists of something more than simply "giving hypophosphites." He believes that the different salts meet different indications, and produce different effects. Their uses have been carefully *preconized* by him, and his book can be read by anyone with advantage. His theory has, however, been pushed into the background by the brilliant discoveries of the bacteriologists. That it has not been quite forgotten is largely due to the efforts of Mr. R. W. Gardner, who has persistently kept the Churchill method before the profession.

Letters to the Editor.

ELSINORE, CALIFORNIA.

I CAME to this place, a pleasant country town on the shore of the only lake in southern California, nearly six years ago, with a consolidation in one lung, the size of a man's fist. I have recovered my health as much as possible so that I have not lost a single day in the last year; and know whereof I affirm, that any physician himself having poor health or family needing a change to another climate, will do well to correspond with me

S. H. WASHBURN, M. D.

The Medical Digest.

TREATMENT OF PHTHISIS BY THE FRENCH CLINICIANS:—Live in the Engadine, the Tyrol, if tuberculosis threatens; at Pau, Madeira, Mentone, when it has occurred (Jaccoud); near the sea, only in the absence of fever (Hayem).

Children of tuberculous parents must reside in the country, and be hardened against cold by ablutions and douches of cold water. They must have pure, unconfined air (Peter).

Cod-liver oil, glycerine, arsenic, creosote, salicylic acid (Jaccoud) and quinine for the fever. Atropine for sweats. Cocaine, stomach lavage, super-alimentation (Debove,) for vomiting and denutrition. Blisters, actual cautery (Hayem), tincture of iodine locally. Sulphur waters, Cauterets, Eaux-Bonnes in torpid forms without hemoptysis or febrile inflammation; arsenical waters, Royat, Mont-Dore, in other cases (Jaccoud).

Bouchard gives beech-wood creosote, gr. jss, in pill with almond soap powder; one pill every two hours, the daily dose being five to eight pills. In certain cases, with rapid evolution, raise the daily dose gradually to thirty pills.

Dujardin-Beaumez directs patients to reside where the windows can be opened day and night. They are then in the same condition as sailors and savages, with whom tuberculosis is unknown. Be prudent in this treatment, when the patients have been habituated to a confined atmosphere. Do not change brusquely to the system of continuous fresh air, but let them reach it by degrees. Do not leave the patients to the air alone; there are some other indications, as adjuvants. Let the cases have the benefit of suralimentation, of tonics, analeptics, expectorants, balsams, and all the hygienic measures at our disposal.

Landouzy treats the sweats by powdering the affected parts of the skin with salicylic acid and talc, one part to nine.

—*La Pratique Journalière des Hôpitaux de Paris*.

CREOSOTE ENEMATA.—In chronic and congestive tuberculosis, where the fever does not run too high, and lesions are not too far advanced, treatment by creosote gives good results, especially when it is used in the form of enema. It causes no irritation nor inconvenience, and is equally well borne by children as by adults. Administered through the stomach, it has not these recommendations. The following injection is suggested by Dr. Revillet (Belgium), after cleansing the rectum with warm water: Pure creosote, 2 to 4 grammes, oil of sweet almonds, 25 grammes, yolk of one egg, and 200 grammes of water. To be used at bedtime and continued for

months. Dr. Chaland (Belgium), advises 1 to 3 grammes of pure creosote in 100 to 300 grammes of distilled water, well shaken up; or in smaller bulk, 3 grammes of creosote, 10 grammes of brandy and 200 grammes of distilled water. The spirit apparently renders the creosote more soluble. Dr. Kugler recommends 1 gramme of creosote in suppository form, inserted night and morning.—*Revue Médicale* (Belgium).

TUBERCULIN AND ITS MODIFICATIONS.—Trudeau (*Internat. Med. Mag.*), places on record a number of cases treated by tuberculin and its modifications. Thirteen patients were treated by Koch's tuberculin. Of these six were incipient cases; of which three were apparently cured, two had the disease arrested and one was improved. Of four advanced cases, in two the disease was arrested and in two the remedy failed. Of three far advanced, two were improved and one failed. These results are but little better than those obtained by climatic treatment. The author limits the use of tuberculin to afebrile cases.

Ten cases with Hunter's modification "B." Four incipient cases were apparently cured; of three pronounced cases, one was arrested, one improved, one unimproved; of three pronounced cases, one was improved and two were not. This modified tuberculin causes less fever than that of Koch, and is altogether preferable, as more efficacious and less dangerous.

SHURLY-GIBBES METHOD.—At the Mississippi Valley Association meeting, last October, H. L. Taylor spoke of the Shurly-Gibbes method of treating tuberculosis, by injections of iodine and gold, and chlorine inhalations or antiseptic sprays. These remedies remove fever and night sweats, lessen expectoration and improve nutrition. Then the hygienic and climatic treatment will succeed in many cases. He used an albolene spray, with 10 per cent. creosote and three per cent. menthol deeply inhaled. This gave marked relief from paroxysmal cough, and maintained asepsis in the respiratory tract.

NEW FORM OF IODINE TREATMENT FOR TUBERCULOSIS.—Renzi prescribed the use of iodine one part, iodide of potassium, three parts, chloride of sodium, six parts, and distilled water 1000 parts. Having carefully established the complete tolerance of the compound, he began to give it to his phthisical patients. Hypodermatic dosage was first tried with them, as much as 100 grains having been thus given. This method was not well borne, and the remedy was next tried by the mouth, the dose being from 500 to 550 grains. Nineteen patients, nearly all of them with advanced phthisis, were thus treated. Symptoms of iodism were produced in some patients, but did not persist long after a discontinuance of the doses. In all these persons there was an increase of appetite and of body-weight. There was an increased flow of urine, the temperature was brought down to normal, and the number of bacilli in the sputa was diminished. The writer believes that the results obtained from this plan of using iodine will compare favorably with those of any of the other treatments that are at present in vogue.—*Jour. Am. Med. As.*

HYPODERMIC INJECTIONS OF SALOL IN PULMONARY PHTHISIS.—G. Grossi (*Rif. Med.*, October 31st), reports favorably of the effects of hypodermic injection of salol in cases of pulmonary phthisis. He has tried the method in 11 cases in different stages of the disease. He uses the following solution: Salol g. 10; oil of sweet almonds, g. 30. With a special syringe of the capacity of 5 grammes he injects at first 5 g. of this solution every day, increasing the dose after a time by half a syringe-ful every two days till three syringe-fuls (equivalent to 5 g. of salol in 15 g. of the oil) are given in the day—at 7 A. M., 12 noon, and 7 P. M. The author states, however, that there is no risk in beginning with two syringe-fuls a day, and after a few days suddenly increasing the dose to three. The injections are best given in the gluteal region, where they cause neither pain nor reaction; after a time, however, some local swelling is apt to arise, and it is then well to discontinue the treatment for a short time. Grossi tried cod-liver oil as an excipient for the salol, but was

obliged to abandon it on account of the local inflammation which it set up. He suggests that this may have been due to the impurity of the oil. With one exception, in which the disease was very far advanced, all the cases were greatly benefited by the injection of salol; fever and night sweats ceased, cough was relieved, the number of bacilli in the sputum diminished, the patient gained strength and the weight increased. The author has been careful to exclude possible sources of fallacy.

CREOSOTE IN THE TUBERCULOSIS OF CHILDREN.—At the Pædriatic Congress recently held at Naples, T. Guida (*Rif. Med.*, October 25th), stated that he had used creosote in various tuberculous affections in children. He preferred giving the drug by the rectum in an emulsion of almond and olive oil with yolk of egg, or in a hydro-alcoholic solution. The dose was progressively increased from a minimum of twenty-five milligrammes to a maximum of one-half to one gramme in the twenty-four hours. In every case great irritability of the rectal mucous membrane was manifested, this being followed after a time by dysenteric symptoms. He had made a number of experiments on guinea-pigs and rabbits, which had led him to the following conclusions: 1. The injection of creosote (however prepared) by the rectum in children is undesirable when any gastro-intestinal disturbance is present. 2. The experiments on guinea-pigs show that the administration of creosote by the rectum is an efficacious means of preventing invasion by the tubercle bacillus, or of lessening its virulence. 3. Administration by the mouth is inadequate for this purpose, inasmuch as it is impossible in that way to introduce a sufficient amount of the remedy to produce a therapeutic effect. If the mucous membrane of the rectum is in a sound condition, even large doses do not cause irritation.

SALOPHEN.—Caminer (*Therap. Monats.*, October, 1892), has used this drug in gramme doses in cases of cephalalgia, neuralgia, and migraine. In two cases of supra-orbital neuralgia it was efficient.

If used in the early stages of migraine it aborts the attacks, but it has no influence on their frequency. In two cases of acute rheumatism the author used the drug with good results, and there was no relapse.

ATROPINE IN HÆMOPTYSIS.—M. B. Blumenau (*Meditzinskoie Obotzrenie*, No. 9, 1892), emphatically confirms recent statements (see the *Epitome*, May 28th, 1892, par. 87), as to the powerful hæmostatic properties of atropine. He relates the case of a phthisical soldier, who was expectorating one and a half or two tumblersful of pure blood daily, in spite of the application of ice bags to the chest, and the internal use of ergot and mineral acids in full doses. On the fourth day of the hæmoptysis $\frac{1}{10}$ grain of sulphate of atropine was injected under the skin. The blood spitting at once considerably decreased, and, after a second injection on the following morning, speedily ceased altogether. The patient's sputum remained slightly tinged with blood for a few days afterwards, but the discoloration soon disappeared, and the man was discharged in a satisfactory state. In the way of secondary effects only slight dryness of the throat and some acceleration of the pulse were observed for a short time.—*Brit. Med. Jour.*

CREOSOTE IN PHTHISIS.—In a new communication on this subject the writer reaffirms the convictions expressed by him in previous papers as to the great value of this remedy. He finds that it relieves cough, lessens expectoration, improves nutrition, and lessens the number of bacilli even to extinction. The physical signs show evidences of a lessened area of damaged pulmonary tissue, and even the occlusion of small cavities.

The objections to the use of creosote are few; and usually obviated by a little judgment. Occasionally the stomach becomes intolerant; shown by headache, inappetence, and a sluggish feeling in the performance of usual duties; or there is slight pain or uneasiness in the stomach, evidently brought on by the creosote. These ill effects are frequently occasioned by a too rapid increase of the dose, by

faulty administration, or by idiosyncrasy; or there is an irritative or weak stomachal condition dependent on catarrhal gastritis, or a possible atrophy of the gastric tubules. The remedy of this state is not far to seek. Diminish the dose or interrupt its use for a while, and resume in small and slowly increasing doses, and more frequently repeated, only after a period of complete rest from taking it. If diarrhœa be occasioned by its use, the same rules apply, or, indeed, an appropriate opiate may be added in small amount to each dose with good effect, so far as toleration is concerned.

Usually the ordinary tests for creosote do not show its presence in the urine. It has been found there, however, and it may irritate the kidneys at times in a pronounced manner. I do not believe this will often take place, unless large and frequent doses of the drug be given.

It is true that under these circumstances I have recognized a passing albuminuria, which disappeared when the amount of creosote taken by the patient was diminished. Examine the urine carefully every few days, at least, when the patient is taking large amounts of creosote. When renal disease exists, I have given creosote and have observed no ill effects from its use, although it is true I have not been willing to increase the dose beyond six or eight minims in the twenty-four hours.

According to Dujardin-Beaumetz, creosote in appreciable doses, while it is eliminated from the body by way of the respiratory organs, congests the bronchial mucous membrane, and thus promotes the occurrence of pulmonary hemorrhage. According to him the drug is strongly indicated whenever hemorrhage actually occurs. Nothing in my experience thus far tends to corroborate this view. It seems to me prudent, however, to recognize the possibility of what Beaumetz affirms, and for this reason to interrupt the use of creosote during the time there is hæmoptysis, or an evidently imminent tendency to it.—Beverly Robinson, *Med. Record.*

SOMMERBRODT has recently published his further experience in the use of creosote against tuberculosis. In his earlier report he said that eight minims a day

would cure every case if taken in the beginning; he is now convinced that larger doses up to 25 to 60 minims a day will cure even severe and advanced cases. He does not, of course, claim to cure every case, but he is positive that larger doses of creosote will do more for many tubercular patients than any other drug; and his motto is "The more creosote that can be borne, the better." The maximal doses given in the pharmacopœias are much too small, according to him; he begins at ten years of age with 15 minims daily, and increases this to 60. He formerly gave it in capsules with balsam of tolu; but this method he abandoned as soon as he discovered that very often the balsam was not absorbed, but passed by the bowel undigested. He now gives it in capsules mixed either with cod-liver oil or olive oil. Sommerbrodt claims that creosote, if its use is persisted in for years, will allow people who cannot get away to remain at home in comparative comfort. No fear need be felt of a bad effect upon the stomach, as Sommerbrodt has given patients as high as 20,000 capsules without affecting the appetite injuriously; the most that was noted was a slight belching during the first week, which soon disappeared.—*Gaillard's Medical Journal*.

WHAT the patient must see to is that under no circumstances shall his expectoration be allowed to dry before it is destroyed, or placed where it can by no possibility be a source of danger. To this end he must scrupulously avoid spitting on his handkerchief, on the floor or on the ground. When away from his home he should carry with him a small flask containing a small quantity of five per cent. solution of carbolic acid or corrosive sublimate, a grain to the pint, or some other disinfectant. At the last meeting of the American Public Health Association a flask was exhibited designed for this express purpose, having a movable cover on each end, in order to allow of its being thoroughly cleansed. In the house it would be well to use a small paper cup, which should be set inside a china or metallic cup, the latter containing a disinfectant solution which should moisten the bottom of the former. This paper cup should be burned, or

otherwise safely disposed of, at least once a day, if the expectoration is considerable, much oftener.—*Circular, Penna. State Board of Health*.

PRIZE FOR ESSAY ON TUBERCULOSIS.—The Congress for the Study of Tuberculosis announces a prize of three thousand francs for the best essay on "The Means of Diagnosing Latent Tuberculosis before its Appearance or after its Cure." The essay must be written in French and sent to Dr. L. H. Petit, 76 Rue de Seine, Paris, before April 1st. 1893. Each memoir should be accompanied with a sealed envelope containing the author's name and address.

GUAIACOL.—A. Jacobi gives guaiacol in four daily doses, after meals and at bed-time, in sweetened water or in milk. The maximum daily dose was twenty-eight drops for adults; twelve drops for children. The drug was also used by inhalation in ten cases. The cases numbered over 100 in all. As to the results, he says: "When the first patients who took guaiacol—a few in September, more in October and November—turned up again in December or about New Year's, after most of them had been exposed already to the winter crowding, closed windows, and winter weather, I was surprised at the almost uniformly favorable reports volunteered by almost all. There was hardly one but looked better and felt better; even a few absolutely hopeless cases with large cavities asserted they ate better, slept better and sweated less. Most looked fairly well, and their strength had improved. In almost none had emaciation increased, most had gained flesh. one ten pounds in two months. I will say right here that in every case where the diagnosis was not absolutely clear without it, the examination for bacilli was made and their presence proven positively. In many digestion and appetite had improved at once. Cough became looser, and after a month or two appeared to be more mucous and less purulent.

I have not felt justified, in a large number of cases, to limit my therapeutic endeavors to the administration of guaiacol alone. The employment of arsenic (mainly arsenious acid) and digitalis in some form or another has rendered

me such eminent service in the treatment of tuberculosis, that in at least half of the cases I have combined them with the use of guaiacol. The best method of giving them is in the shape of pills; almost everybody takes readily two milligrammes of arsenious acid (gr. $\frac{1}{30}$) and two or three milligrammes of (Merck's) digitaline three times a day. This mode of administration has besides its tastelessness and its long toleration when taken after meals, the further advantage of the facility with which strychnine or another preparation of nux vomica, perhaps also a mild laxative or a constipating drug are combined with it. For indeed the disturbances of a universal tubercular process are many and various. They are in most cases anatomically tangible. Even if they were not so, I am not ashamed of owning up to my weakness of trying to make my patients comfortable, though a prescription may consist of more than one or two items. I still believe in my old saying that I prefer a prescription that acts well to one that looks well.

During cold weather cod-liver oil was recommended to all patients with fair digestion. Those with good cutaneous circulation would wash and rub with cold water, or water with alcohol, or warm water with alcohol, over all or part of their bodies. The complications with nasal and naso-pharyngeal catarrh were treated with salt water, sprays of nitrate of silver (1:20—1000), also with irrigations of acetico-tartrate of aluminium in water (1:75—120). Night-sweats have been treated with a single dose, given at bedtime, of a milligramme (gr. $\frac{1}{60}$) or less of atropine sulphate, or agaricine from six to twelve milligrammes. They may be combined, and frequently, when nocturnal cough proved too great a torture, one or both were combined with a dose of morphine.—*International Med. Mag.*

ADVICE TO CONSUMPTIVES.—Go to Southern Pines, N. C., and engage in raising grapes, making wine, and drinking it. Live in a log hut, or a tent, in among the pines, inhaling the aroma of the turpentine all day and all night. And when you have recovered your health, stay there and keep it.

CREOSOTE FOR PULMONARY TUBERCULOSIS.—Among those recently advocating creosote is A. L. Hall, of Fair Haven, N. Y. (*Med. Record*). He favors its use in full doses, following the German custom. He employs the following formula:

R.—Pure beech-tar creosote . . .	3i.
Fluid extract gentian . . .	3ij.
Comp. tinct. cardamom . . .	3i.
Alcohol . . .	3ij.
Syrup . . .	3viij.

M. S.—3i at a dose. The gentian and creosote are to be increased as rapidly as toleration will permit.

LITTLEJOHN strongly recommends a residence in the Rocky Mountain region, between El Paso, Texas, and Central Wyoming. His reasons are, as he states in the *Med. Record*, the living examples of consumptives now cured by residence in this section.

THE PRE-TUBERCULAR CONDITION.—Station first—*Subjective*. General malaise, not fitting into the frame of recognized acute or chronic disease; in this respect comparing to neurasthenia, also diagnosed by exclusion. As stated above, general malaise is a falling off from the individual norm of eating, breathing, muscular power, refreshing sleep, buoyant mind, etc. This impaired general condition leads up to the local lesion, both subsequently uniting to bring about destruction.

Station second. The above subjective symptoms *plus* the objective change in the character of the respiratory elements; but as yet no râles, either dry or moist.

In the second period the general condition has advanced to noticeable loss of adipose tissue in some, or of red blood-corpuscles to the verge of pernicious anæmia in others, or both combined. The order of importance in respiratory changes in auscultation are (1) quality, (2) pitch, and (3) rhythm. The changes now occurring are in the reverse order of their importance—rhythm first, then pitch, then quality. This is the main point I wish to emphasize. *Rhythm*: Interrupted (cog-wheel) inspiration, a pause not existing in the norm, a prolonged and audible expiration. *Pitch*: Higher than the original vesicular low pitch. This holds good of both auscultation and percussion, in accord with Dr.

Leaming's great law : low pitch denotes porosity, high pitch denotes density.

Quality: From vesicular to broncho-vesicular; and finally bronchial, or tubular as I prefer to call it.

Station third. Dry followed by moist râles and gurgles, according to whether the tubercular invasion begets a localized or widespread bronchiolitis or local excavation. The third station for pre-tuberculars, then, is either a direct rush into diffused tuberculosis (general bronchiolitis, or tubercular pleurisy) in those of destructive metabolism, or a more gradual destruction by infiltration and excavation, perhaps with subsequent limitation, in those of constructive metabolism.

In conclusion, I offer the following maxim : The pre-tubercular condition is an as yet undemonstrable tubercular invasion, engrafted upon those whose nutritive changes have brought them to a condition below par as compared with their usual physiological standard. This physiological unit is strictly and absolutely individual.—Tyndale in *The Climatologist*.

REPAIRING DAMAGED THROAT AND LUNG TISSUE. IN CONNECTION WITH THE MINERAL TREATMENT IN TUBERCULOSIS.—In hæmoptysis, catarrhal discharges from mucous surfaces, bronchorrhœa, cavities, etc., I find inhalation of ammonium chloride, oil of pine and beech-wood, guaiacol, produces a most marvellous effect in connection with the mineral treatment, viz : Mercury, gold and zinc, which I have been advocating for some time in my articles in THE TIMES AND REGISTER.

I have given a condensed outline of the mineral treatment, and, since my last article, I have added to it the inhalation treatment, the guaiacol ; which, I am glad to say, is marvellous in its results in the treatment of the damaged conditions of the throat and lungs, above named ; and also as a means of restoring the normal expansion of the lungs and the elasticity of the lung fibre.

I also give guaiacol internally in connection with the mineral treatment, combined with a good syrup of hypophosphites. I find that cases, as a rule, improve remarkably after using one of the minerals with guaiacol, and when the

latter can be brought in contact with the mucous surfaces of the air passages, as well as the alimentary canal, especially the stomach, remarkable results have been generally attained.

It is necessary to keep the glandular system in as perfect order as possible, so that the peculiar fertilization necessary to enable the muco-serous tissues to entertain and develop the germs of tuberculosis, may be so counteracted or annihilated that this predisposing cause will be removed ; in proportion to the amount of secretion eliminated through the normal channels. If this is done by proper flushing, and by stimulation of the glandular system by one of the three minerals, the choice depending on the temperament and diathesis of the patient, and his susceptibility to the treatment which should be chosen, it is possible not only to restore the damaged throat and lung tissue, but also to increase the volume of blood, which has been reduced by mal-assimilation, and incapacity to receive food.

The fermentation of food in the duodenum must be overcome, and if this can be done and the volume of blood increased, it is possible to prolong the lives of seemingly hopeless cases and to reduce their susceptibility to tuberculosis to such an extent that they may live to old age. I am convinced, by my results in the treatment of consumption during the last two years, that seventy-five per cent. of all cases could be saved, if proper treatment were secured, and I am warranted in saying that my success will corroborate my assertion.

Of course it will be understood that consumptives who have suffered with inanition and mal-assimilation of food, to such an extent as to have reduced their volume of blood too much, cannot be cured ; but may be wonderfully relieved and their lives prolonged. I have quite a number of just such cases on hand now. I do not hesitate to tell them at once that they cannot be cured, but that I may be able to prolong their lives. I find it best always to be honest and tell them the truth.

Climate has but little to do with successful treatment, only so far as the change of surroundings is accompanied with a more active life, out-door exercise,

stimulating the glandular system, regulating the bowels, and in this manner relieving the obstructed condition of the duodenum and the impaction of the colon. This increases not only the capacity and the desire for food, but also the volume of the blood. So it is very perceptible that if the secretions are kept in the normal channels, and the body cleansed inside and out, so to speak, success is, as a rule, the result. The change of environment, in many cases, is just as beneficial and not so dangerous as a journey to some distant clime, where many go, only to die. How true is the saying: "Distance lends enchantment."—Shade, Washington, D. C.

TREATMENT OF PHTHISIS IN JAPAN.

For afebrile cases:

R.—Creosoti,	m. iv.
Acidi gallici,	gr. ij.
Ferri redacti,	gr. ij.
Calcii hyphosphatis,	gr. iv.

M. Ft. pil. no. viij.
S. One pill thrice daily.

For febrile cases:

R.—Creosoti,	m. iv.
Acidi gallici,	gr. ij.
Zinci sulphatis,	gr. ij.
Pulv. opii,	gr. ss.
Pulv. digitalis,	gr. ss.

M. Ft. pil. no. v.
S. One thrice daily.

For night sweats, with fevers at night:

R.—Creosoti,	m. iv.
Acidi gallici,	gr. ij.
Zinci sulphatis,	gr. ij.
Atropinæ sulphatis,	gr. 13 ^{ss} .

M. Ft. pil. no. v.
S. One thrice daily.

—Sei-i-Kwai.

In the *Medical Record*, G. H. Penrose sums up an article on creosote as follows:

"I will not burden you with the histories of any of the cases, as none were marked failures or marked cures, but in each there was marked improvement, and it is because of this gradual improvement that I think we have the more encouragement for continuing the use of creosote in every case of tuberculosis.

"In conclusion, I should like to urge the use of creosote in progressive doses, and think that if previous observers had used the drug in larger doses their results would have been better and more decided. I cannot agree with Professor

Flint in the assertion that creosote has but little more than a palliative action in cases where cavities exist. In several instances we have noticed decided improvement in such cases.

"I do not claim, nor do I think, that we have a specific in creosote, but from careful observation of several hundred cases of this dreadful disease, I do think we have a drug of infinite worth, and, as such, deserving of careful use and more careful study."

TREATMENT WITH THE SERUM OF DOG'S BLOOD.—The interesting experimental investigations of Richet and Hericourt, announced during the past year to the French Academy of Sciences, with the serum of dog's blood in the treatment of tuberculosis, are in the line of thought that at present underlies our attempts to cope with the disease. These observers have been able to demonstrate that in rabbits inoculated with a culture of the tubercle bacillus, the evolution of tuberculosis can be arrested by subsequently subjecting the animal to injections of dog's serum. When very virulent cultures are employed, the evolution is only delayed. Injections of a healthy animal with the serum prevent the development of experimental tuberculosis at a later period. The effective substance has not been identified as yet, but a small dose of the serum is sufficient (one-half cubic centimetre per kilo of the rabbit).

The clinical results obtained in tuberculous disease of human beings by this method of treatment, which has been fully tried in the Paris hospitals, would indicate that it also fails rather in the degree than in the kind of its action. It certainly acts as a potent stimulant to cell activity. Whether it possess another action is undetermined.—Kinnicutt, *Med. Record*.

WALZER recommends benzozol guaiacol as a substitute for creosote. Benzozol is pleasanter to take, being odorless and tasteless. In the stomach and small intestines it splits up into guaiacol and benzoic acid. The results obtained from its use by Walzer were fully equal to those afforded by guaiacol. The daily dose is twenty-four grains. It may be given in lozenges, with sugar and chocolate.

CRIADO regards the sanatorium as the most dangerous source of tubercular infection (*Brooklyn Med. Jour.*). Concerning aristol, he quotes Herard's report as follows:

"After having observed the excellent effects of aristol on scrofulo tuberculous lesions, and found that aristol was perfectly innocuous in internal medication, M. Nadaud decided to make use of hypodermic injections formulated as follows:

Oil of sweet almonds (sterilized) . . . 100 c.cm.;
Aristol 1 c cm.

The solution should be filtered.

"Nadaud's first injections were made upon a child aged seven years, who, after an attack of coxalgia, had several abscesses followed by fistulous tracts. One cubic centimetre of aristol was injected daily. After twenty-five days of treatment there was no trace of suppuration to be seen. In consequence of this result, Dr. Nadaud decided to test the value of hypodermic injections of aristol in the treatment of pulmonary tuberculosis. Twenty-three patients suffering from tuberculous lesions of the lungs were successively treated by injections of aristol without any other medication whatever. In seven cases the amelioration was so great as to induce the belief that complete cures had been effected. The treatment covered from twenty-five to thirty days. The amelioration has continued up to the time of writing—i. e., from three to four months. In five of the twenty-three cases there was a prompt amelioration, but in a month after the cessation of the treatment some symptoms were observed which seemed to call for a second series of injections. Generally the relapse was of slight importance, and the patients in this category soon resumed their habitual occupations. In no case was it necessary to make a third series of injections. The rest of the cases are still under aristol treatment. In concluding his paper, Dr. Nadaud said: 'The effects of aristol are promptly observed, usually on the sixth or seventh day of medication, and are first manifested by a diminution of the cough and a suppression of night-sweats. After twenty or twenty-five days of treatment we find that the patient has increased in weight. Aristol gives its best results in the first and second stages of pulmonary tuberculosis. The injec-

tions do not cause inflammation, irritation, abscess, eschar, or induration.'"

DR. UTLEY, of Los Angeles, says that part of California is too damp for consumptives. On the foot-hills, twenty-five miles from the seacoast, the soil is sandy, the water pure, and here would be the place for a sanatorium for incipient phthisis. Branches should be opened at Banning, in the mountains, or summer camps in the canons where the air is dry and rarefied; also at the seashore for suitable cases.

In the ensuing discussion, Dr. Potter spoke favorably of "The Needles," a low sink, in which patients can sleep out of doors all the year round, and breathe the hot, furnace atmosphere, where no germ can live long. It is not a pleasant place, and patients do not stay there very willingly.—*Southern Cal. Pract.*

DR. JOHN NIXON treats phthisis in the following manner: The patient is placed in a pneumatic cabinet; the air-pressure reduced to one or one and one-half inches (mercury gauge), and the air medicated with eucalyptol and creosote, finely divided by steam. The patient remains in the cabinet for ten minutes, and the treatment is repeated daily. The usual good effects are said to follow, with one not usually noted, viz.: An insusceptibility to catching cold.—*Indiana Med. Jour.*

DR. FLICK claims that the doctrine of contagion in tuberculosis, and the public attention directed to the means of preventing contagion, have already reduced the mortality from this cause in Philadelphia to the extent of 784 lives saved per annum.

A FRENCH observer claims to have found tubercle bacilli in bed bugs, and that they act as carriers of this disease-producer.

SMOLIKOSKY recommends creosote by the rectum, mixed with olive oil, yolk of egg, etc.

DR. FLICK still puts his trust in iodoform inunctions; claiming that they will cure tuberculosis in the early stages. Later, he uses creosote in addition, as well as tonics and forced nutrition.

TROCHET's capsules of colchicum salicylate contains colchicum, $\frac{1}{4}$ milligramme, and twenty centigrammes of the natural methyl salicylate, derived from oil of wintergreen. The superiority of this product to the synthetic acid of commerce is too well known to require comment. The capsules form an elegant method of administering a combination of undoubted efficacy. The American agent is the house of E. Fougere & Co., of New York.

News.

The physician whose notions of beef preparations relate with the old-fashioned Liebig extracts can have little idea of the perfection to which the modern manufacturers have carried them.

The (London) *Lancet*, April 30, 1892, speaking of Wyeth's Beef Juice says:—

"The following analytical notes and results testify unmistakably to the excellence of this preparation. It is a dark reddish-brown liquid of pleasant beef-like flavor, and free from objectionable preservatives. It contains not only the albuminous principles of beef in an active and soluble form, but in the condition in which they occur in the freshly expressed juice of beef itself. Viewed with the spectroscope a dilute solution is seen to give two absorption bands, characteristic of fresh blood or hæmoglobin. The liquid loses this property, however, as soon as it is boiled; while the coagulated albuminous principles assume a blood-red tint. According to our experiments no less than fourteen grains of solid albuminous principles in every fluid ounce are thus precipitated. The following figures gained in analysis will convey some idea of the eminent degree of concentration through which this preparation has been carried. Notwithstanding this, the vital elements of beef juice it contains have been preserved unchanged. Moisture, 44.87 per cent.; organic matter, 38.01 per cent.; mineral

matter, 17.12 per cent. The organic material contains 4.57 parts of nitrogen and the mineral matter consists largely of common salt, and, of course, soluble phosphate. Results like these make it safe to assert that as an example of preparations of this class Wyeth's beef juice is little short of perfection."

Mr. Wyeth states that on receipt of 50 cents he will send to any physician a bottle of this beef juice (retailing at 75 cents) carriage paid, for personal trial.

Dr. Fessenden N. Otis recently visited Japan, and was warmly welcomed there. The Surgeon-General ordered a supply of Otis' special instruments to be provided for the Japanese army surgeons.

A sad state of affairs prevails in Japan, where the old and the new, native and foreign, ideas do not harmonize; while custom clings to the old. The doctor formerly dispensed his drugs, receiving cash for them, and a present of cakes, eggs, or fish for his advice, and if the patient forgot the cash, the doctor was too polite to ask for it. With the advent of foreign medicine came the retail druggist. But as he got all the cash, and the doctor could not live on cakes and eggs, the latter was compelled to return to his dispensing in order not altogether to forget what cash looked like. But now the drug men clamor for the government to restrain the doctor, and forbid his dispensing drugs.

We hope the Japanese will find a way to settle the difficulty to the satisfaction of all parties—and let us know how they do it.

CHICAGO can at last boast of a weekly medical journal of its own. And what do you suppose is this product of the great western city's medical culture? Ad epitome of the original papers in the London *Lancet*! The abstracting is well done; but the original is better worth \$7.50 a year than the epitome is worth \$1.00.

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